**Statement of Inquiry:** Appreciating and analysing structures, shapes, and patterns in the natural world enhances creativity while providing a sense of order.

**Inquiry Questions**

**Factual Question**

* How do you define a sequence recursively?
* What is the difference between arithmetic and geometric sequences?
* How do you find the sum of a given number of terms in a sequence?

**Conceptual Question**

* What is the relationship between sequences and linear and exponential functions?
* How do you determine the correct model for a data set?

**Debatable Question**

* Can every phenomenon be modeled mathematically?
* How significant is *e*?

**Friday, February 14 (No homework weekend)**

Linear Regression Activity (in class)

**Monday, February 17**

12.1: Arithmetic Sequences

*Learning Outcomes: Arithmetic Sequences have a common difference and can be defined explicitly or recursively. Recursive sequences are generated with a starting point and a designation of how to operate on any number to get the next number in the sequence.*

Assignments due Wednesday / Thursday

* 12.1 Homework and Practice / page 429 / 2 – 9, 12 – 14, 16, 17

**Tuesday, February 18**

Exponential Regression Activity (in class)

**Wednesday, February 19 / Thursday, February 20**

Possible homework quiz from 12.1 assignment

12.2: Geometric Sequences

*Learning Outcomes: Geometric sequences have a common ratio, r, and can be defined explicitly or recursively. The graphs will increase or decrease depending on r.*

Assignments due Friday

* 12.2 Homework and Practice / page 440 / 4 – 6, 8 – 10, 12, 13

**Friday, February 21**

Possible homework quiz

12.3: Geometric Series

*Learning Outcomes: A finite geometric series is the sum of a given number of terms in a sequence.*

Assignments due Monday

* 12.3 Homework and Practice / page 452 / 3 – 16, 18

**Monday, February 24**

Possible homework quiz

13.1: Exponential Growth Functions

*Learning Outcomes: Exponential functions model geometric patterns and have an exponent as the independent variable. Exponential growth functions are of the form* $y=a∙b^{x}$*, where* $b>1$*.*

Assignments due Tuesday

* Are You Ready / page 462 / 1 – 8
* 13.1 Homework and Practice / page 470 / 2 – 4, 11, 12, 17 – 20

**Tuesday, February 25**

Possible homework quiz

13.2: Exponential Decay Functions

*Learning Outcomes: Exponential functions model geometric patterns and have an exponent as the independent variable. Exponential decay functions are of the form* $y=a∙b^{x}$*, where* $b<1$*.*

Assignments due Wednesday / Thursday

* 13.2 Homework and Practice / page 482 / 3, 4, 6, 8 - 11

**Wednesday, February 26 / Thursday, February 27**

Possible homework quiz (13.2)

Quiz 12.1 – 13.1

Regression Activity

Assignments due Friday

* Finish Regression Activity

**Friday, February 28**

13.4 part 1: Compound Interest Formula

Assignments due Monday

* 13.4 Homework and Practice (part 1) / page / 2 - 8

**Monday, March 2**

Possible homework quiz

Base *e* Investigation

Assignments due Tuesday

* Finish base e investigation

**Tuesday, March 3**

Possible homework quiz

13.3: The base *e*

Assignments due Wednesday / Thursday

* 13.3 Homework and Practice / page / 2, 7, 8, 11 - 18

**Wednesday, March 4 / Thursday, March 5**

Quiz 13.2, 13.4 (part 1), 13.3

13.4 part 2: Continuous Interest Formula

Assignments due Monday

* 13.4 Homework and Practice (part 2) / page / 9 – 13, 16 – 18

**Friday, March 6 (no school)**

**Monday, March 9**

14.1: Fitting Exponential Functions to Data

Assignments due Tuesday

* 14.1 Homework and Practice / page / 1, 4, 5, 9, 10, 12, 14

**Tuesday, March 10**

Possible HW quiz

14.2 Investigation

Assignments due Wednesday / Thursday

* Finish 14.2 Investigation

**Wednesday, March 11 / Thursday, March 12**

14.2: Choosing among linear, quadratic, or exponential models

Unit 6A group quiz

Assignments for Friday

* 14.2 Homework and Practice / page / 1 – 3

**Friday, March 13**

14.2: Choosing among linear, quadratic, or exponential models

Unit 6A test

Assignments for Monday

* 14.2 Homework and Practice / page / 4 – 6, 11

**Monday, March 16 (end of 3rd marking period)**

Unit 6A test